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ABSTRACT

This paper is a summary of a study concerned with identification of risk variables which affect the development of social and emotional behavior in young children. Families with pre-schoolers responded to a questionnaire designed to screen children who might be considered high risk. The screening results were validated with behavior observations of mother-child interactions. The high risk group and a control group participated in experiments on early differences in basic forms of information processing: characteristics of physiological arousal and attention, reaction time, discrimination learning, reinforcement preferences and avoidance behavior. Three functional risk categories are delineated: conduct disorder, personality disorder, and a combination of the two. The mother's behavior is also categorized. Although this model for prognosis of risk development will be revised, some interesting results emerged. The questionnaire results show more substantial correlations between the impulsivity-aggressivity dimension of the children and parent scales than between the passivity-anxiety and the parent scales. The observations show that the mothers of the Conduct Disorder risk group seldom initiate interaction with their children, and these children resist or ignore their mothers' demands significantly more often compared to the control group.
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CG 012 309

RISK DIAGNOSIS FOR THE DEVELOPMENT OF SOCIAL BEHAVIOUR DISORDERS IN PRE-SCHOOL CHILDREN

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1. Introduction

It is common policy among child psychologists and psychiatrists to stress the need for effective preventive interventions. They believe that behavioural and emotional disorders can be more effectively dealt with if they or their antecedents are identified early and adequate measures can be taken prior to the outbreak of a serious disorder. Unfortunately, as a second review by YULE (1977) and a paper by BUTOLLO (1977) points out, the practical application of preventive interventions seems to be very limited. Because of the difficulty in identifying psychological risk factors most studies, as this symposium seems to show, are concerned with the identification (and eventually modification) of very drastic, often somatic risk factors - birth problems, brain dysfunctions, maternal deprivation, hospitalization, etc. There is no doubt that this kind of research is of great importance. The interest of our research group, however, has moved towards risk variables which effect the development of emotional and social behaviour of young children, even though they do not show obvious somatic or intellectual deficits. The development of these children seems to show more subtle interactions between variables, such as the temperament of the child and the parents, the parent-child and the parent-parent relationship as well as variables of the socio-economic environment.

By focussing on these events we are perhaps not dealing with risk factors for the most severe psychiatric disorders. But we believe that the factors we are examining are very common in our Western cultures and that they have to do with the development of disorders that reduce the individual's potential of living as well as encroaching upon the social environment. These factors are also likely to contribute to the development of "neurotic" emotional problems and problems of social behaviour. On the other hand, if these risk factors can be identified, they might be changed more easily than the so-called "hard-core" somatic risk factors.

2. General research strategy

The basic assumptions underlying our approach state that emotional disorders of childhood are very heterogeneous, but nonetheless they can be grouped into a few subgroups. These subgroups have different typical, behaviourally observable characteristics, different patterns of antecedent variables or events and need different intervention strategies - either preventive or therapeutic ones. Even though these assumptions might appear psychologically trivial, their implications are not. They indicate that there is no use to apply general interventions for all problems. The subgroups of problems in emotional and social behaviour have to be treated differentially, even in advance. This limits the modes of preventive intervention. Unlike in some health education programmes, the communication via mass media does not seem to be the proper way. Careful diagnosis of individual risks, individual selection and treatment is a consequence. But the diagnosis and the intervention have to deal not only with the individual's behaviour but with its social and economic environment as well. Individual risk diagnosis does not imply limitation to variables of the individual's behaviour only. That is the main topic of our project. The successive steps are:

1) Risk diagnosis by means of a questionnaire for parents, which checks out information about the behaviour of the child, the parent, the parent-child interaction, the parent-parent interaction, and the socio-economic environment of the child; random samples.

2) Application of a functional learning model for the development of emotional disorders of children to the questionnaire data.

3) Selection of families with prognosis for an extreme development of their child which falls into one of the problem groups; selection of matched control groups.

4) First validity test of the screening procedure by using detailed behaviour observation of mothers and children.

5) Experiments about early differences in basic forms of information processing: characteristics of physiological arousal and attention, reaction time, discrimination learning, reinforcement preferences and avoidance behaviour.

6) Controlled preventive intervention in a cross-sequential follow-up study using a control group design.

The study is now in the third year. Construction and test of the diagnostic instruments (questionnaire and standardized observation of mother-child-interaction) are completed.

The first random samples with children of 2 and 4 years of age (1000 each) from an urban environment have been investigated. Both mothers and fathers responded to the mailed questionnaire. Smaller samples - organized according to the questionnaire results - have been observed and worked with as subjects in the experiments. The first results are now available. Due to limited space this report concentrates on a short description of results concerning the relationship between questionnaire and behaviour observations. A few results from the experiments will also be reported. More detailed information, especially about construction principles for the questionnaire and the behaviour observation, is given in a research report (Butollo et al., 1977).

3. Preliminary results: questionnaire and behaviour observation

a) Questionnaire:

Each group of variables (e.g. behaviour of children, of parents, etc.) consists of subscales. Examples of such scales are "permissiveness", "rejection", "overprotection" for mothers and fathers or "activity", "impulsivity",

"fear of strangers" for the children. The items have been formulated as behavioural and situational as possible, to avoid the direct measurement of attitudes with its error sources. The subscales habe been postulated according to cross-sectional results from the literature and according to our own functional hypotheses about the possible processes in the development of emotional disorders in children.

A factor analytic evaluation led to a partial reformulation of the subscales.

For the behaviour of the children two major dimensions which are well-known from the literature have been replicated: active, impulsive, aggressive behaviour versus passive, reflective, anxious, withdrawn behaviour. There was also a third dimension which consisted of a mixture of the first two. A fourth dimension was less clear, similar to the "immaturity" dimension seen by QUAY (1972). This factor might not have appeared so clearly due to the fact that we have eliminated mentally retarded children from the analysis.

For the behaviour of the mothers it is worth reporting that three global dimensions appeared, which were best identified by the following subscales:
I.: Rewarding, warm, cooperative mother-child interaction;
II: Permissive, overprotective, isolating the child;
III:Rejecting, punishing

Dimensions II. and III. correlate with a correlation coefficient of +.22, dimension I. is uncorrelated with the others. Dimension III. of the mother's behaviour correlated relatively highly with the "impulsivity" dimension of the children (+.44), which is what we expected. Opposite to our hypothesis, dimension III also correlated positively with the "passivity-anxiety" dimension of the children (+.21). It is important to

mention that these correlations between variables of the mothers and the children are cross-sectional measures and do not give information about the predictive validity of the questionnaire.

Instead of giving more details about the interaction of parent and child measures at the time of testing I prefer to sum up the questionnaire results as follows: There are more substantial correlations between the impulsivity-aggressivity dimension of the children and the parent scales than between the passivity-anxiety dimension and the parent scales.

b) Behaviour observation:

According to our functional risk model the questionnaire data about children, parents, interactions and environment have been combined to constitute risk scores for conduct disorder (CD-risk), personality disorder (PD-risk) and a combination of CD and PD (CD/PD-risk). Families with children whose score were extreme for one of these risk developments were invited for behaviour observation. A control group was also invited for observation. The behaviour observation consisted of a free play observation and a few standardized situations which were likely to provoke mother-child-conflicts.

Hypotheses about differential behaviour of the children and their mothers were formulated according to their questionnaire scores - but observation and processing were performed according to a double-blind procedure. The preliminary results basically show that the questionnaire-defined-risk groups differ most in the observation categories which relate to mother-child-interactions. The children with a CD-risk started

an interaction with their mothers significantly more often than the PD-risk children. But contrary to our expectation we found that even the PD-risk children start an interaction much more often than the children from the "less risk" control group. Mothers of CD-risk children, on the other hand, comparatively seldom initiate an interaction with their children.

CD-risk children resist to or ignore their mother's demands significantly more often compared to the control group. Again, the PD-risk children show intermediate scores, which lie between CD-risk group and "less risk" control group. If mothers of CD-risk children start an interaction, which they seldom do, they more often directly demand something from their child. Unfortunately, they succeed less than the mothers of the other groups.

Summing up the preliminary results from the behaviour observation we found that most results about CD-risk children were as expected. Surprisingly, however, the PD-risk children and their mothers generally show results that are more similar to the CD-risk group than to the "less risk" control group. In most variables we expected the latter group to take an intermediate position between the CD- and PD-risk group - which was not the case.

4. Experiments

For the experiments the 4-year-old children were divided into four groups, this time according to their own behaviour scores (on the basis of the questionnaire answered by the parents): CD-risk (N = 12), PD-risk (N = 7), CD/PD-risk (N = 10), less risk (LR, N = 16), sex variable equally distributed.

Experiment 1: Physiological responses during a reaction time task, discrimination learning and avoidance learning (by H. Dirlich-Wilhelm, R. Schandry, E. Sedlmayr and W. Butollo).

Reaction time was measured for responses to a light. During the discrimination learning the children were to respond only to one out of several lights (40 trials). A second run on that task was done under distracting conditions (noise or melodies).
In the avoidance task the children could switch off a tone whose intensity gradually increased.
Besides the various response measures two physiological variables were recorded throughout the experiment, finger pulse amplitude (FPA) and heart rate. Results for the FPA are shown in figure 1 (group averages). All groups show an increase over successive tasks, rest periods having usually higher scores than previous task periods.
The "less risk" group shows the highest average amplitudes, followed by PD-risk and the other two groups. During the avoidance task all groups reduce their average amplitude - except the CD-group. This result might prove interesting with regard to theories about impulsive aggression and avoidance learning (e.g. HARE, 1970).

Heart rate results (figure 2) show that the CD-risk group has lower average scores than the other groups (which seems to be contradictory to the higher finger pulse tension). The CD-risk group also responds less to task demands compared to the PD- and PD/CD-risk groups. The LR group has averages similar to the PD and the mixed group but shows less response to the task experiments. The PD-risk group shows the greatest response to the task. Our hypothesis of greater sensitivity (and vulnerability) of the PD-risk children, which we could not confirm with the data from our behaviour observation, finally seems to be supported by these results.

The essentials of the behavioural data from the experiment are as follows:

- There are no group differences in reaction time.
- Discrimination performance is best in the LR and least in the PD/CD-risk group.
- PDR children show the least errors, CDRs have the highest error score.
- The avoidance response comes latest in the PDR-group, whereas CDR children are very quick in this respect. These results contradict our expectations about individual differences in avoidance behaviour based on the model of Hare (1970).

Experiment 2: Preference of reinforcers (by A. Werner)

Three groups (8 PDR / 14 CDR / 18 LR) could choose between different buttons for different reinforcers (sweets, chips, pictures, light stimulus, balls).
CDR-children showed a significantly different frequency distribution. They chose significantly more often familiar reinforcers, light stimulus, less often secondary reinforcers.
PDR-children had an almost equal preference distribution.
LR- children chose most often sweets or toys or secondary reinforcers, least often light stimuli. The intragroup heterogeneity, however, is enormous.

5. The next steps

After final evaluation of the experimental and the observational data we will have to reformulate our model for the prognosis of risk developments. This revised model should become the basis of the controlled intervention program whose aim is the modification of the risk variables.
It is important to emphasize that during their contact with the parents the research group is very careful about possible labeling events. Terms like "risk development" or CD-children might have their place in the research report - during the contact with the parents and their children, however, they might give cause to dangerous misinterpretations. We understand our

intervention as an aid to improve parent-child interactions and - consequently - the educational climate in the family.

6. References

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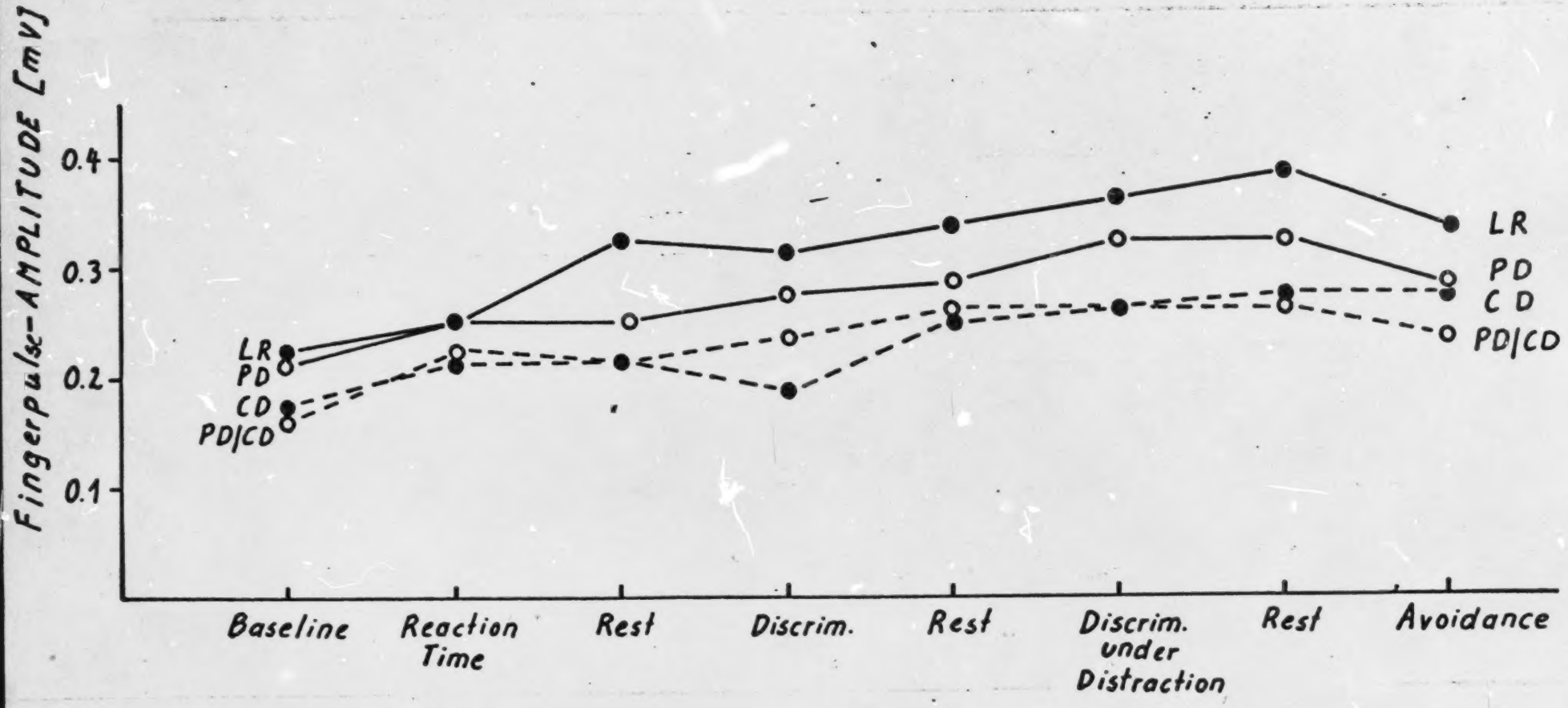
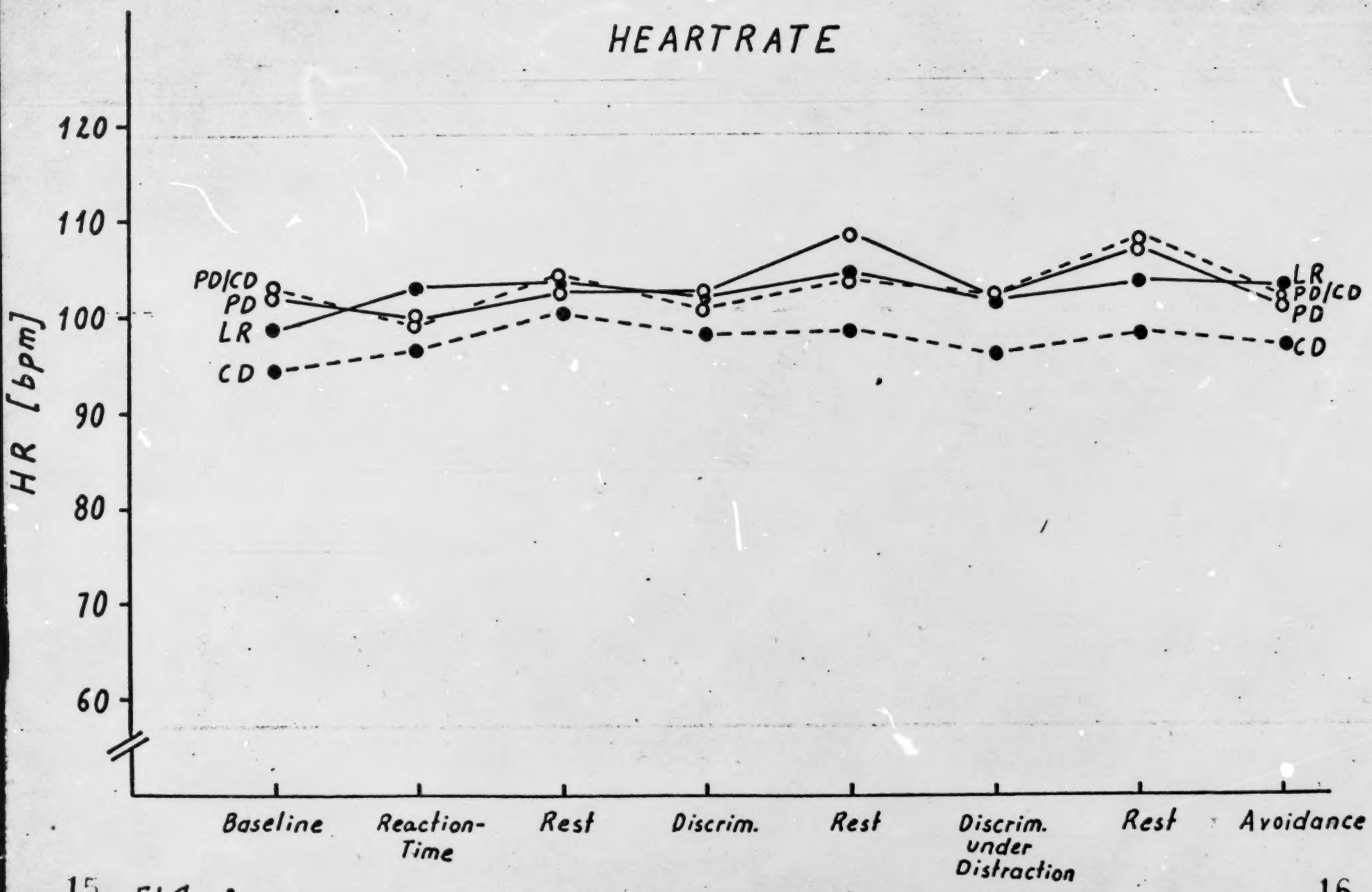

Fingerpulse-AMPLITUDE [mV]
0.4
0.3
0.2
0.1
LR
PD
CD
PD/CD
LR
PD
C D
PD/CD
Baseline
Reaction Time
Rest
Discrim.
Rest
Discrim. under Distraction
Rest
Avoidance

FIG. 1


HEARTRATE
HR [bpm]
120
110
100
90
80
70
60
PD/CD
PD
LR
CD
LR
PD/CD
PD
CD
Baseline
Reaction-Time
Rest
Discrim.
Rest
Discrim. under Distraction
Rest
Avoidance

15 FIG. 2

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